

**REMARKS/ARGUMENTS**

In the Official Action Summary Sheet associated with the outstanding Official Action, the Examiner indicates that claims 1-9 and 11-16 are rejected but does not mention the status of pending claim 10. Additionally, claims 1 and 9 have previously been cancelled without prejudice and therefore the only pending claims are claims 2-8 and 10-16. Correction of the Office Action Summary Sheet is respectfully requested. Applicants have amended claims 2 and 15 and therefore claims 2-8 and 10-16 remain in this application.

On page 2 of the Official Action, the Examiner indicates that claims 1-8 and 10-16 are rejected under 35 USC §103 as patentable over Isao (JP 2003-254724 as translated by the U.S. PTO) in view of Hartog (U.S. Patent 6,542,228). Again, claim 1 was cancelled without prejudice and is not now pending in this application. Correction of the Official Action in this regard is respectfully requested.

**Telephone interview conducted Wednesday, December 29, 2010**

Applicants' undersigned representative contacted Examiner Kim on December 28, 2010 requesting a telephone interview to discuss the subject matter which is actually shown in the Isao and Hartog references and to discuss possible claim amendments further distinguishing the existing claims from the cited prior art combination. The Examiner's agreement to a telephone interview at 11:00 on December 29, 2010 is very much appreciated.

Applicants' undersigned representative telephoned Examiner Kim at 11:00 and inasmuch as there was no answer, left a telephone message of the attempt at the telephone interview. Examiner Kim returned the call indicating that she had not heard the telephone ring. Applicants' undersigned representative began the interview with a brief recap of the substance of the

outstanding Official Action pointing out that the Isao reference, while it does disclose a fibre-optic system, does not a “fibre-optic surveillance system” as required by Applicants’ independent claims.

Applicants’ undersigned representative also pointed out the Examiner’s admission on page 3, lines 3 and 4, that the Isao reference does not teach “an interferometric module” and suggested that the Examiner apparently intended this to be a reference to the “interferometric interrogation system” which is recited as one element in independent claims 2 and 15. the Examiner confirmed the admission.

Applicants’ undersigned representative also pointed out that, in the second full paragraph on page 3 of the Official Action, the Examiner was apparently equating the Hartog reference with teaching of an interferometric OTDR module. The Examiner apparently did not appreciate that this interferometric module is employed only as a switch in the Hartog reference. Again, Applicants’ representative queried the Examiner as to where Hartog contained any disclosure of an interferometric interrogation system as originally claimed in claims 2 and 15. The Examiner had no response as to where there was any teaching in Hartog of the claimed “system” other than the reference to an interferometric module which is used as a “switch.”

Applicants’ undersigned representative then suggested that Applicants would consider amending independent claim 2 and claim 15 to clarify that instead of the interferometric interrogation system just being responsive to “sensed data output from said array,” Applicants would be willing to limit that responsiveness to “an output phase shift in at least one of said sensors.” Applicants’ representative’s view was that, even though Hartog did not disclose the more generic teaching of “sensed data output from said array,” Applicants were willing to further limit the claim to have the interferometric interrogation system responsiveness limited to “an

output phase shift in at least one of said sensors.” Applicants’ representative also noted that both the “sensed data output” and the “output phase shift” were specified as being “indicative of a force applied to said at least one of said sensors” and this feature was also missing from Hartog.

After the above discussion, Applicants’ undersigned representative asked the Examiner to indicate how or where she believed there was any evidence to support her conclusion that “Isao discloses a fibre-optic surveillance system.” To the extent that there is any doubt as to what is meant by a “surveillance” system, Applicants’ representative noted that the common dictionary definition of the term prevailed, especially as the term is used in Applicants’ specification and in particular the Background of the Invention portion of that specification. The Examiner indicated that she would consider this issue, but did not have any specific comment.

Applicants’ undersigned representative then asked the Examiner how or why she believed that the Hartog reference taught the claimed “interferometric interrogation system.” The Examiner’s answer was only that the Hartog reference taught the use of “interferometers” only as an “optical switch” (see column 16, lines 1-4 which are also cited on page 3 of the Official Action, second full paragraph). Applicants’ representative noted that the disclosure of a Mach-Zehnder interferometer does not teach the claimed “interferometric interrogation system,” let alone such a system which is responsive to “an output phase shift in at least one of said sensors” or a system that is responsive to an output phase shift “indicative of a force applied to said at least one of said sensors,” all being limitations set out in Applicants’ independent claims 2 and 15. The Examiner had no response to this argument.

Then Applicants’ undersigned representative inquired as to how or why the Examiner believed Isao disclosed both the “at least two fibre-optic point sensors” and the “distributed fibre-optic sensor linking said at least two fibre-optic point sensors.” The Examiner pointed to

Figure 1 in the Isao translation (page 36) as teaching a combination of point sensors 21-23 and a distributed fibre-optic sensor 2.

Instead of responding by identifying where these features are disclosed in the PTO translation of the Isao reference, the Examiner referenced her previous Examiner's Answer on page 5 (first full paragraph, last sentence, beginning "Isao provides evidence of this fact"). However, the Examiner's Answer merely describes "interconnecting fibers (2) act as low sensitivity sensors in comparison to high sensitivity strain gauges (21, 22, 23, . . . ."

Applicants' undersigned representative asked where in the Isao reference there is any evidence that what the Examiner is calling "interconnecting fibers (2)" are in fact the claimed "distributed fibre-optic sensor" as required by Applicants' independent claims 2 and 15. The Examiner could not indicate where this was disclosed in the Isao reference (Applicants had specifically delayed the telephone interview from Tuesday to Wednesday in order that the Examiner could be completely prepared).

At this point in the telephone interview, instead of providing an indication of where the original claim limitations were contained in the prior art, let alone Applicants' proposed amended claim limitations, the Examiner took the position that the amendments should be submitted with arguments and she would issue a further non-final Official Action. Applicants' attempt in conducting an interview was to avoid further official action in as much as active prosecution in this application has gone on since May of 2007 (including at least three different Appeal Brief submissions).

Applicants would note for the record that on May 7, 2008, the Pre-Appeal Panel issued a decision forcing Applicants to file an Appeal Brief and yet when that Appeal Brief was filed on June 9, 2008 with the identical arguments raised in the "Supporting Statement" attached to the

Pre-Appeal Brief Request for Review, the Examiner's response on October 2, 2008 was yet a new and 4<sup>th</sup> Official Action. A new second appeal was noted and a further Appeal Brief filed on January 12, 2009 and was again followed by a 5<sup>th</sup> new Official Action on May 15, 2009. Applicants re-noted the appeal for the third time and filed a 3<sup>rd</sup> Appeal Brief on November 5, 2009. Here, the Examiner mailed an Examiner's Answer on April 29, 2010 citing a newly discovered reference, i.e., JP 2003-254724 (the Japanese language version of Isao), which was submitted as newly discovered document in the Information Disclosure Statement filed January 15, 2010.

However, the Patent Office translated the document (PTO 10-2477) and attached a copy of the Isao translation to the Examiner's Answer. In view of the PTO translation and its interpretation of Isao, Applicants filed an RCE in order to incorporate the subject matter of claim 1 in former dependent claim 2 rewriting it in independent form, believing that the Examiner had clearly failed to disclose where either cited reference discloses the claimed "interferometric interrogation system" responsive either to "said sensed data output from said array" (as in previous claim 2) or responsive to "an output phase shift in at least one of said sensors" (as in currently amended claim 2), especially where that responsiveness is "indicative of a force applied to at least one of said sensors" as required by the independent claims.

In order to permit the Examiner to consider the above language, the previous RCE and Amendment were filed. However, the Examiner still apparently relies upon the Isao reference as purportedly teaching a distributed fibre-optic sensor 2 when the language of the PTO translation itself specifies that the high sensitivity optical fiber distortion gauges 21, 22 and 23 are connected in series with "optical fibers 2, 2 . . . ." (page 15). How or why the Examiner believes

that an ordinary optical fiber 2 as that disclosed in Isao discloses a “distributed fiber optic sensor” has not yet been explained.

The Examiner still apparently relies upon the Isao reference as purportedly teaching fiber optic point sensors when the language of the PTO translation only discusses optical fiber distortion sensors. How or why the Examiner believes that the “optical fiber type distortion gauges 21, 22, 23 . . .” (Isao, page 15, paragraph [0013]) discloses a “fiber optic point sensor” has not yet been explained.

Additionally, the Examiner fails to indicate how or where either Isao or Hartog discloses an “interferometric interrogation system” [with any structure] that is responsive to an output of one of the sensors “indicative of a force applied to said at least one of said sensors for establishing a position at which said force is applied.” Applicants made this point at the conclusion of the interview, with the Examiner taking no position as to the proposed amendments.

It is remembered that the burden of setting out a prima facie case of obviousness is on the Examiner. Most troubling in the interview was the Examiner’s refusal or inability to specifically point out the portion of Isao upon which the Examiner relies for the teaching that Isao teaches “at least two fibre-optic point sensors 21-23” and “a distributed fibre-optic sensor 2” (as recited on page 2 of the Official Action). While Applicants have found a discussion of elements 2 and 21, 22 and 23 on page 15 of the Isao PTO translation, there appears to be no teaching that the “optical fibre sensor 2” is the claimed “distributed fibre-optic sensor” or that the “optical fiber type distortion gauge 21, 22, 23” is the claimed “fiber optic point sensor” both of which are defined in Applicants’ specification.

After the Examiner's refusal and the conclusion of the telephone interview, Applicants attempted to reach the Examiner's supervisor, SPE Lee, Uyen-Chau, but the telephone call went to voicemail. The undersigned left a telephone message requesting SPE Lee to return the call. As of the submission of this Amendment, no return call had been made.

**Response to the merits of the Official Action**

As noted above during the telephone interview, the Examiner has not identified any evidence indicating that either of the cited prior art references comprise a "surveillance" system in accordance with the common meaning of this term and the manner in which the term is used in Applicants' Background of the Invention.

Additionally, the Examiner admits that Isao does not teach "an interferometric module" (an apparent reference to the claimed "interferometric interrogation system"), but relies upon Hartog as teaching the same. However, the Examiner then seems to ignore the teaching in Hartog which requires that the Mach-Zehnder interferometer be used as a switch, i.e., on or off. Such application in Hartog precludes any interferometric interrogation system responsive to the data output from the array (and in particular output phase shift of one of the sensors in the array) which is "indicative of a force applied to said at least one of said sensors." A switch providing an on/off indication does not provide any analog information as to "a force applied to said at least one of said sensors."

Accordingly, the Hartog teaching of interferometers "utilized instead of switches" (the Examiner's own words from page 3, second full paragraph of the Official Action) would preclude providing any sensed data output or output phase shift information which is "indicative of a force applied to said at least one of said sensors." As a result of the above, Hartog not only

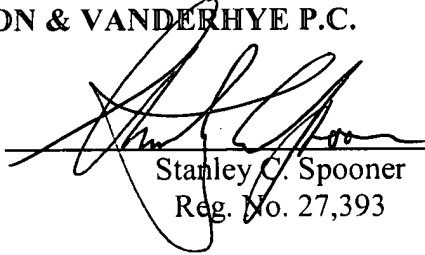
fails to teach the claimed "interferometric interrogation system," but Hartog would specifically teach away from Applicants' claimed combination of elements as set out in apparatus claim 2 and method claim 15. Accordingly, the Examiner has failed to meet her burden of establishing a *prima facie* case of obviousness under 35 USC §103 and any further rejection thereunder is respectfully traversed.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that remaining claims 2-8 and 10-16 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact applicant's undersigned representative.

Respectfully submitted,

**NIXON & VANDERHUYE P.C.**

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